Emission Calculation Sheet - Small Generator

Calendar Year: _____ **SIC Code:** _____

Facility Name: _____ **Emission Unit ID** _____

Physical Address: _____

Specifications and Assumptions

Note: The emission factors below are only to be used if you do not have specifications from the manufacturer. The factors below are taken from U.S. EPA's AP-42, Compilation of Air Pollutant Emission Factors

Maximum capacity:	250.0	kW
Max. capacity (kW to hP):	335.3	hP
Total hours of operation:	1,500.0	hr/yr
Fuel consumption:		gal/yr
Fuel usage to run hours[e]:		hr/yr[b]

Total max. hours of operation:	1,500.0	hr/yr

Heating value of fuel:	140,000	Btu/gal
Fuel sulfur content:	0.0015	%

Conversion Factors

1kg =	2.205	lb
1ton =	2,000	lb
1MMBtu =	1,000,000	Btu
1 kgal =	1,000	gal
1 hP =	0.7457	kW
1 day =	24	hrs
1 yr =	8,760	hr

Total criteria pollutant emissions	**11.2 tpy**	
Total HAPs emissions	**0.01 tpy**	

Calculation Methodology for NOx, CO, SOx, PM-10, VOC:

Use emission factors (E.F.) from Chapter 3.3, Table 3.3-1 for diesel fuel fired industrial engines (5th Edition of USEPA's AP-42 Manual as amended through Supplement B, October 1996). Use Total Organic Compound (TOC) E.F. from Chapter 3.3, Table 3.3-1 for diesel fuel fired industrial engines as representative VOC emissions.

Annual Emission = Maximum Capacity[f] x E.F. x Annual Hours of Operation (hr/yr) / 2000 (lbs/ton)

Hourly Emission = Annual Emission (tons/yr) / Total Hours of Operation (hr/yr) * 2000 (lbs/ton)

Pollutant	Nox	CO	SOx	PM-10	VOC
E.F. (lb/hp-hr)	3.10E-02	6.68E-03	2.05E-03	2.20E-03	2.47E-03
hourly (lb/hr)[c]	10.393	2.240	0.687	0.738	0.828
annual (tpy)[a]	7.795	1.680	0.515	0.553	0.621	11.164

Calculation Methodology for HAPs:

Use emission factors (E.F.) from Chapter 3.3, Table 3.3-2 for diesel engines (5th Edition of USEPA's AP-42 Manual as amended through Supplement B, October 1996).

Annual Emission = Maximum Capacity[f] x E.F. x Annual Hours of Operation (hr/yr) / 2000 (lbs/ton)

Hourly Emission = Annual Emission (tons/yr) / Total Hours of Operation (hr/yr) * 2000 (lbs/ton)

Pollutant	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Formaldehyde	Naphthalene	Toluene	Xylene
E.F. (lb/hp-hr)	5.37E-06	6.48E-07	6.53E-06	2.74E-07	8.26E-06	5.94E-07	2.86E-06	2.00E-06
hourly (lb/hr)	1.80E-03	2.17E-04	2.19E-03	9.18E-05	2.77E-03	1.99E-04	9.60E-04	6.69E-04
annual (tpy)	1.35E-03	1.63E-04	1.64E-03	6.88E-05	2.08E-03	1.49E-04	7.20E-04	5.02E-04	6.67E-03

Emission Calculation Sheet - Large Generator

Calendar Year: _____

Facility Name: _____

Physical Address: _____

SIC Code: _____

Emission Unit ID _____

Specifications and Assumptions

Note: The emission factors below are only to be used if you do not have specifications from the manufacturer. The factors below are taken from U.S. EPA's AP-42, Compilation of Air Pollutant Emission Factors

Maximum capacity:	800.0	kW
Max. capacity (kW to hP):	1,072.8	hP
Total hours of operation:	1,500.0	hr/yr
Fuel consumption:		gal/yr
Fuel usage to run hours:		hr/yr[b]
Total max. hours of operation:	1,500.0	hr/yr
Heating value of fuel:	140,000	Btu/gal
Fuel sulfur content:	0.0015	%

Conversion Factors

1kg =	2.205	lb
1ton =	2,000	lb
1MMBtu =	1,000,000	Btu
1 kgal =	1,000	gal
1 hP =	0.7457	kW
1 day =	24	hrs
1 yr =	8,760	hr

Total criteria pollutant emissions	**24.9**	**tpy**
Total HAPs emissions	**0.01**	**tpy**

Calculation Methodology for NOx, CO, SOx, PM-1

Use emission factors (E.F.) from Chapter 3.4, Table 3.4-1 for large stationary diesel fuel industrial engines (5th Edition of USEPA's AP-42 Manual as amended through Supplement B, October 1996). Use Total Organic Compound (TOC) E.F. from Chapter 3.4, Table 3.4-1 as representative VOC emissions. Use total PM-10 E.F. from Chapter 3.4, Table 3.4-2 for PM-10 emissions.

Annual Emission = Maximum Capacity[f] x E.F. x Annual Hours of Operation (hr/yr) / 2000 (lbs/ton)

Hourly Emission = Annual Emission (tons/yr) / Total Hours of Operation (hr/yr) * 2000 (lbs/ton)

Pollutant	NOx	CO	SOx	PM-10	VOC	
E.F. (lb/hp-hr)	2.40E-02	5.50E-03	1.21E-05	7.00E-04	7.05E-04	
hourly (lb/hr)[c]	25.748	5.900	0.013	0.751	0.756	
annual (tpy)[a]	19.311	4.425	0.010	0.563	0.567	24.876

Calculation Methodology for HAPs:

Use emission factors (E.F.) from Chapter 3.4, Tables 3.4-3 and 3.4-4 for large stationary diesel engines (5th Edition of USEPA's AP-42 Manual as amended through Supplement B, October 1996).

Annual Emission = Maximum Capacity[f] x E.F. x Annual Hours of Operation (hr/yr) / 2000 (lbs/ton)

Hourly Emission = Annual Emission (tons/yr) / Total Hours of Operation (hr/yr) * 2000 (lbs/ton)

Pollutant	Acetaldehyde	Acrolein	Benzene	Formaldehyde	Naphthalene	Toluene	Xylene	
E.F. (lb/hp-hr)	1.76E-07	5.52E-08	5.43E-06	5.52E-07	9.10E-07	1.97E-06	1.35E-06	
hourly (lb/hr)	1.89E-04	5.92E-05	5.83E-03	5.92E-04	9.76E-04	2.11E-03	1.45E-03	
annual (tpy)	1.42E-04	4.44E-05	4.37E-03	4.44E-04	7.32E-04	1.59E-03	1.09E-03	8.40E-03